

POPAT SUBCOMMITTEE REPORT/RECOMMENDATIONS

April 7, 2000

I. POPAT Adoption

The POPAT Subcommittee met on April 7, 2000 and was specifically tasked with examining, evaluating and discussing options related to the proposed POPAT and then to develop and deliver recommendations concerning the use of the POPAT, or a similar test, as the final skills evaluation in the Basic Law Enforcement Training program.

The committee reviewed the POPAT report guidelines developed by Dr. Kevin Guskiewicz, UNC and Dr. Randy Schmitz, UNCG and agreed to adopt their POPAT report for the following reasons:

- A. The test is **reasonable**. The determining pass/fail time of 440 seconds (7 minutes, 20 seconds) was formed using the norm-referenced statistical methodology provided by Biddle and Sill¹ and calculated by Dr. Guskiewicz. The 103 individuals sampled consist of in-service officers, one-year police officers and recruit students. Many of the officers performing the initial test had not been participating in an active fitness program. It is reasonable to expect recruits engaged in a BLET fitness program for 16 weeks to complete this test in the time allotted.
- B. The test is **fair**. Preliminary data indicates no adverse impact to protected class individuals. Of the data collected from the BLET-2000 sites, there were only 6 failing scores past 440 seconds. Of the 17 female scores collected, only one failed.
- C. The test is **trainable**. All the committee members agreed that the POPAT is trainable, meaning that a student can be taught and prepared for successful completion in a 16-week period of time.
- D. The test is **safe and easy to set up and administer**. A group of 20 students can be safely tested in a short period of time. Each task has been designed to both measure the student's ability to perform the tasks and to evaluate in an environment that addresses the safety of the student and other participants. The course is easily set up with the addition of a patrol vehicle and exercise mats strategically placed on the course to prevent injury. There are a limited number of props and obstacles in the course, and the space required to conduct the testing is minimal.
- E. The test is **practical**. Many of the obstacles/events are already in place in delivery sites throughout North Carolina. The only addition is the purchase of the stair steps.

- F. The test can be **consistently applied**. The format and structure of the POPAT can be systematically implemented throughout the state. All instructors can be taught how to correctly and precisely administer the test, and data can be continuously collected to aid with validation efforts.

II. Justification for Individual Tasks/Events

All of the tasks in the POPAT are directly related to the Task Analysis completed in 1994², except for one task associated with mental recall. The committee supports the following breakdown of tasks/events and justifies the continued application of the POPAT in the following manner:

A. Uniform guidelines

- 1) The committee supports the use of the prescribed uniform guidelines:

"Trainee is required to be dressed in duty uniform which will include:

- a. Option of wearing running shoes
- b. Leather or web belt that includes
 - (1) Holster and weapon
 - (2) Handcuffs w/case
 - (3) Ammunition pouch and ammunition
 - (4) Police radio
 - (5) 7-1/4" Stinger-type flashlight
- c. Optional headgear"³

- 2) The committee justified this standard because all officers need to be able to perform the established tasks wearing actual job equipment.

Associated tasks:

#614 - Wear standard issue equipment while performing physical activities.

B. Verbal recall

The actual test begins with the student being given a set of street names with the instructions that he/she must be able to recall them at the end of the test. The committee supports this task because remembering and recalling addresses/locations are very common activities for police officers. The justification for keeping this activity focuses on the officer's ability to recall important information and apply critical skills thinking when under duress or exposed to a physical emergency. Additionally, officers need to be aware of their surroundings and able to report location changes especially when they are involved in foot chases or other emergency response situations.

Although there is not a specific task identified in the task analysis for mental recall or for applied thinking, the committee recommends keeping this task in the POPAT.

C. Exit vehicle - run 200 yards

After given the street names, the student immediately exits a patrol vehicle and runs 100 yards, turns around and runs the same 100 yards back to the passenger side of the patrol vehicle.

The committee agreed that this short sprint simulates chasing a fleeing suspect or simulates an officer having to run to another vehicle for a medical emergency.

Associated tasks:

#617 - Sprint at full speed (less than 200 yards)

D. Pull 150 pound person out of vehicle and drag 50 feet

Upon arrival at the passenger side of the vehicle, the student opens the car door, unbuckles 150 pound individual, pulls him/her out of the car and then drags the individual 50 feet.

The committee supports this element because officers may have to respond to medical emergencies in vehicles and they must be able to release an individual from the vehicle and to physically drag the individual to a safer location. The 1994 Task Analysis showed fifty feet to be the most common response officers reported that they dragged or pulled individuals.⁴ Fire emergency experts have indicated that 75 feet is a safe and reasonable distance away from a potential fire hazard, i.e., burning vehicle.⁵ Consequently, fifty feet is more than a reasonable distance from the vehicle and is the minimum distance an officer should park his/her patrol car to approach and rescue an individual injured inside.⁶ Ideally, the officer, after releasing the individual from the vehicle, should safely drag the individual completely out of traffic and away from any other hazards to a safe and secure location.

The committee agreed that using a 150 pound individual as the weight standard is reasonable. The average weight for all males in the United States is 152 pounds and for all females is 124 pounds.⁷ The 1994 Task Analysis revealed 192 pounds as the average weight of a dragged individual.⁸ It is expected for an officer to have the physical strength and stamina to drag the average individual to safety. And it is reasonable to expect the officer to drag an individual weighing only 150 pounds.

In addition to a medical emergency, officers also must be able to physically remove individuals from vehicles who may be under arrest, and then drag them into a prone handcuffing position out of traffic.

Associated tasks:

- #591 - Carry by yourself an immobile child
- #592 - Carry by yourself an immobile adult
- #595 - Drag by yourself an immobile child
- #596 - Drag or carry by yourself an immobile adult
- #616 - Pull person out of vehicle to effect rescue
- #639 - Pull person out of vehicle who is resisting arrest

E. Run up/down 5 step staircase 3 times

The student completes the victim drag at the stair steps and then immediately proceeds to traverse the steps 3 times. The "average" flight of stairs is 15 steps⁹, and in every city and county in North Carolina there are buildings with more than three levels.

The committee supports this element because officers routinely climb stairs in apartment buildings, office buildings, residences, etc., as a part of their normal calls for service. Being able to quickly maneuver up and down several flights of stairs is also a required skill, because officers need to be able to respond in an emergency situation.

Associated tasks:

- #620 - Run up stairs
- #621 - Run down stairs
- #642 - Climb stairs in multiple story building

F. Push open and go through a door

Upon completion of the stairs, the student runs 25 feet to a door with 50 pounds of weight attached to it and enters through the door.

The committee supports this standard because officers do have to push against partially opened doors and push against locked doors. Officers must have enough body strength and stamina to push against force applied by another person (who may be trying to keep them out) or to push against a locking mechanism. The 1994 Task Analysis indicated that the average weight that officers push (other than a vehicle) is 275 pounds and the most common survey response for pushing objects was 100 pounds.¹⁰ It is reasonable to expect an officer to exert fifty pounds of pressure against a doorway. It is safer to have the students push a standard weight against the door to simulate this task, than to actually have another individual

positioned on the other side of the door pushing against the student. Using a "real" person can increase injury rates for both individuals involved, and will result in inconsistent pressure being applied at the door for each student being tested.

Associated tasks:

#588 - Push open a door with your shoulder

G. Twenty push-ups/twenty sit-ups

After pushing through the door, the student drops to the ground and completes 20 military style push-ups and 20 sit-ups.

The committee supports this test element for the following reasons:

1. Officers need to have the physical strength and ability to "wrestle," grab and hold onto an individual when they are effecting an arrest and/or defending themselves in a violent confrontation. In a recent report published by the U.S. Department of Justice, 64 percent of incidents involving unarmed use of force situations resulted in officers physically grabbing or holding onto a suspect.¹¹ Officers need to have the physical strength to control the "push-pull" activity of a suspect trying to break free and elude arrest. Avery and Landon (1992) conducted research supporting the need for considerable strength and endurance to perform the following tasks: wrestling and subduing suspects, pushing, pulling, and running.¹²
2. Most altercations (62%) involving suspects that resist arrest result with the offender and officer landing on the ground.¹³ So officers are involved in a continuous "push-pull-grab" activity while they maneuver and fight with a suspect on the ground. Officers need to be able to lift themselves off the ground, have the physical strength and stamina to hold a suspect down on the ground, and also have the physical strength to push a suspect off of them.
3. The major muscles needed to perform push-ups and sit-ups are:¹⁴

Pectoralis major - chest
Biceps - front side of upper arm
Triceps - back side of upper arm
Latissimus dorsi - sides of back
Rhomboids - upper, center back
Deltoids - shoulder
Trapezius - upper back
Brachio radialis - upper forearm
Flexor carpi radialis - lower forearm

Palmaris aponeurosis - hand
Rectus abdominis - trunk flexors
External oblique - wraps around the trunk
Iliopsoas - pelvic area

These same muscles are used in pushing, pulling, grabbing, shoving and controlling an individual.^{15 16}

4. Engaging in 20 sit-ups and 20 push-ups lasts approximately 45 to 50 seconds and physically works an officer's anaerobic system. Research has shown that after 45 seconds of exertion, an officer loses significant strength and ability to exert force.¹⁷ Research has also shown that the time it takes to subdue a suspect can vary between 30, 60 and 120 seconds or more.¹⁸ The committee concurred that the "average" physical force encounter with a suspect lasts approximately 50 seconds, and supported utilizing the push-ups and sit-ups as a valid measure of an officer's ability to control and subdue an individual in a short period of time.
5. The most common response indicated in the 1994 task analysis for time spent holding a person to prevent or control his/her actions was 5 minutes. The most common response for physically struggling with a person was also 5 minutes.¹⁹ The committee agreed that it is reasonable to expect the POPAT student to physically exert themselves simulating a ground struggle by doing the push-ups and sit-ups in a time substantially less than the reported time from the task analysis.
6. The committee also agreed that it is not safe or prudent to actually conduct a hand-to-hand struggle as a part of the POPAT because it would greatly increase the risk of injury to the student and test proctor, and cannot be consistently applied from student to student.

Associated tasks:

#622 - Use holds or devices to control or take suspect down
#623 - Tackle a fleeing suspect
#624 - Subdue physically attacking person
#627 - Subdue person resisting arrest
#635 - Grip person tightly to prevent escape

H. Run up/down 5 step staircase 3 times

After completing the push-ups and sit-ups, the student returns to the stairs and traverses them again.

The committee supports this element because officers must be able to climb stairs in a quick manner while their physical systems are aerobically taxed. Additionally, officers routinely climb stairs in apartment buildings, office buildings, residences, etc., as a part of their normal calls for service. Being able to quickly maneuver up and down several flights of stairs is also a required skill, because officers need to be able to respond in an emergency situation.

Associated tasks:

- #620 - Run up stairs
- #621 - Run down stairs
- #642 - Climb stairs in multiple story building

I. Culvert crawl

Upon completion of the stair stepping, the student runs 25 feet to the culvert. Then the student crawls quickly through the culvert with their flashlights in hand.

The committee supports the inclusion of this element for the following reasons:

1. The 1994 Task Analysis indicated that officers sometimes have to crawl under obstacles and through obstacles as a part of their job responsibilities.²⁰ Committee members agreed that sometimes officers have to crawl under houses and other structures looking for suspects or lost individuals. Officers also have to be able to crawl through culverts positioned under roadways looking for suspects or lost individuals. Most structures are typically longer than 40 feet in length and roadway culverts range from 30 feet (ditch to ditch on a single lane road) to over 100 feet (major highway).²¹ Crawling through a 40 foot culvert demonstrates the ability to do this activity.
2. When officers crawl in dark areas, they should be utilizing a light source. It is reasonable for the student to carry a flashlight while they conduct the crawling element in the POPAT.

Associated tasks:

- #600 - Crawl under obstruction
- #606 - Crawl in a confined area
- #646 - Search for a person in a darkened building or environment
- #647 - Hold flashlight while performing various law enforcement duties

J. Twenty push-ups and twenty sit-ups

The committee agreed that it is reasonable to expect an officer to have the physical strength and stamina to conduct this second set of movements. Since the most common responses from the task analysis indicated that officers struggle and hold onto suspects for 5 minutes, it is reasonable to expect the officer to engage in these movements again, taxing their physical strength and endurance. Since the first sequence of push-ups and sit-ups were sustained for approximately fifty seconds, this sequence when to the first sequence is still within the five minutes identified in the task analysis.²²

Many times, after an officer attempts to control an individual, the individual will break free. The officer then has to continue with the pursuit and then re-engage the suspect to finally gain control and effect the arrest. The committee agreed that it is reasonable to expect officers to have the stamina and strength to be able to re-engage and control a suspect.

Associated tasks:

- #622 - Use holds or devices to control or take suspect down
- #623 - Tackle a fleeing suspect
- #624 - Subdue physically attacking person
- #627 - Subdue person resisting arrest
- #635 - Grip person tightly to prevent escape

K. Run 200 yards, return to vehicle

After completing the sit-ups and push-ups, the student then sprints 200 yards.

The committee supports this element because an officer needs to be able to chase a fleeing suspect when he/she is already physically fatigued. Also, there is a task associated with running more than 200 yards, and at this point in the POPAT the student will have demonstrated the ability to run further than the required minimum. In a California Post study, the average distance that officers ran in pursuit of a fleeing suspect was 543 yards.²³ It is reasonable to expect officers to run continuously for 200 yards.

Associated tasks:

- #618 - Run long distance (more than 200 yards)

L. Drag 150 pound person 50 feet

As the student returns to the vehicle from the sprint, he/she reaches and grabs a 150 pound person standing next to the passenger door and drags them 50 feet.

The committee supports this element because officers do need to be able to effect a victim rescue while being in a fatigued physical state.

Associated tasks:

#595 - Drag or carry by yourself an immobile child

#596 - Drag or carry by yourself an immobile adult

M. Verbal recall of street names

The test ends when the student recites the original street names given at the beginning of the test. The committee supports this element, as written earlier, because officers must be able to recall information while under duress.

If the situation arises that a student fails to accurately recall the street names provided, the POPAT test protocol requires that he/she must run the measured 100 yards back and forth again before the official time stops. This simulates the distance an officer would have to run (approximately one city block) to get to a street corner and read the street sign posts to ascertain his/her correct location.

III. Essential Tasks

The 1994 Task Analysis quantified and listed all of the tasks associated with an entry level law enforcement officer and specifically identified the essential tasks that all students must be able to perform to become a law enforcement officer.

Listed below are the essential tasks included in the POPAT:²⁴

- #588 - Push open a door with your shoulder
- #595 - Drag or carry by yourself an immobile child
- #596 - Drag or carry by yourself an immobile adult
- #614 - Wear standard issue equipment while performing physical activities
- #622 - Use holds or devices to control or take suspect down
- #623 - Tackle a fleeing suspect
- #624 - Subdue physically attacking person
- #627 - Subdue person resisting arrest
- #635 - Grip person tightly to prevent escape
- #639 - Pull person out of vehicle who is resisting arrest
- #642 - Climb stairs in multiple story building
- #646 - Search for a person in a darkened building or environment
- #647 - Hold flashlight while performing various law enforcement duties

Tasks not deemed "essential" included in the POPAT:

- #600 - Crawl under obstruction

- #606 - Crawl in a confined area
- #616 - Pull person out of vehicle to effect rescue
- #617 - Sprint at full speed (less than 200 yards)
- #618 - Run long distance (more than 200 yards)
- #620 - Run up stairs
- #621 - Run down stairs

The committee discussed the implications of having the nonessential tasks referenced directly above included in the POPAT and agreed to leave the tasks in the test because the Joint Steering Committee indicated that it is necessary for officers to be able to perform the above listed activities. There are other skills evaluated throughout the Basic Law Enforcement Training course that are not designated as essential tasks, but are tasks that officers routinely perform in their official duties. The format of this POPAT is consistent with the comprehensive testing of the student's cognitive skills on the state examination which tests both essential and nonessential tasks.

IV. Rationale for Continuous Movement

It is reasonable to expect officers to perform a variety of different and unique activities in a quick and sequential manner. Officers must be able to respond to a myriad of activities, demonstrating speed, agility, balance and stamina. The POPAT represents a combination and a variety of skills that officers will have to do as a part of their jobs, and also includes essential functions that officers will have to perform under a minimum degree of physical stress. The sequenced tasks are timed to replicate an officer engaged in tasks commonly associated with a typical patrol response. The time standards are derived from an analytical study of the population base drawn from the ranks of inexperienced law enforcement officers across North Carolina.²⁵

A typical response does not limit itself to a single task.

NOTES

1. D. Biddle and N. S. Sill, "Protective Service Physical Ability Tests," Public Personnel Management, 28:2:217-225.
2. Val Lubens, A Task Analysis Study of Local Law Enforcement in the State of North Carolina. Published Report (Harwinton, CT: Systems Design Group, 1994).
3. Kevin Guskiewicz and Randy Schmitz, "North Carolina Criminal Justice & Sheriffs' Commissions Police Officer Physical Ability Test," unpublished report, March 9, 2000.
4. Lubens, p. 117.
5. Larry Hughes, Deputy Director Training/Inspections, OSFM, interview conducted by Ray Harrington, Training & Standards Staff, 22 May 2000.
6. J. D. Bergeron and G. Bizjakp, First Responder. fifth edition, (Upper Saddle, NJ: Prentice-Hall, Inc, 1999), p. 462.
7. "Height and Weight Tables." Inside New Orleans - adam.com, <http://insideneworleans.adam.com/ency/article/001938.htm>, 1999.
8. Lubens, p. 117.
9. Ray McGee, Chief Building Inspector, Wake Count, interview conducted by Ray Harrington, Training & Standards Staff, 8 May 2000.
10. Lubens, p. 117.
11. National Institute of Justice, "Use of Force by Police: Overview of National and Local Data" (Washington, DC: U.S. Department of Justice, October, 1999), p. xii.
12. Richard Arvey and Timothy Landon, "Development of Physical Ability Tests for Police Officers: A Construct Validation Approach," Journal of Applied Psychology, 7:6:996-1009.
13. Tony Lesce, "Innovative Ground Tactics Training," Law and Order, December 1998, p. 38.
14. Edward Howley and B. Don Franks, Health Fitness Instructor's Handbook. third edition, (Champaign, Ill: Human Kinetics, 1997), p. 92
15. Robert Hoffman and Thomas Collingwood, Fit for Duty: The Peace Officer's Guide to Total Fitness (Champaign, IL: Human Kinetics Publishers, Inc., 1995), p. 41.

16. Illinois Local Governmental Law Enforcement Training Board, "Physical Ability Test," <http://www.palatine.il.us/police/physical.html>.

17. Charles Remsberg, The Tactical Edge (Northbrook, IL: Calibre Press, 1986), p. 423.

18. Hoffman and Collingwood, p. 5.

19. Lubens, p. 117.

20. Ibid., p. 57.

21. Department of Transportation, interview conducted by Ray Harrington, Training & Standards Staff, 22 May 2000.

22. Lubens, p. 117.

23. John Berner and John Kohls, Patrol Officer Physical Performance Testing Manual (California: Commission of Peace Officer Standards and Training, 1982), p. 59.

24. Lubens, pp. 105-106.

25. Guskiewicz and Schmitz, 1999.